

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.27: Testing and measurement techniques—Unbalance, immunity test



AS/NZS 61000.4.27:2006

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-034, Power Quality. It was approved on behalf of the Council of Standards Australia on 27 June 2006 and on behalf of the Council of Standards New Zealand on 23 June 2006.

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The following are represented on Committee EL-034:

Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Energy Market Commission
Australian Information Industry Association
Bureau of Steel Manufacturers of Australia
Consumers Federation of Australia
Electrical Regulatory Authorities Council
Electricity Engineers Association (New Zealand)
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality.

The objective of this Standard is to establish a reference for evaluating the immunity of electrical and electronic equipment when subjected to unbalanced power supply voltage.

This Standard is identical with, and has been reproduced from IEC 61000-4-27, Ed. 1.0 (2000), *Electromagnetic compatibility (EMC) – Part 4-27: Unbalance, immunity test*.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
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- (c) A full point should be substituted for a comma when referring to a decimal marker.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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INTRODUCTION

IEC 61000 is published in separate parts according to the following structure :

Part 1: General

General considerations (introduction, fundamental principles)
Definitions, terminology

Part 2: Environment

Description of the environment
Classification of the environment
Compatibility levels

Part 3: Limits

Emission limits
Immunity limits (in so far as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

Measurement techniques
Testing techniques

Part 5: Installation and mitigation guidelines

Installation guidelines
Mitigation methods and devices

Part 6: Generic Standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as International Standards or as technical specifications or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and a second number identifying the subdivision (example: 61000-6-1).

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Australian/New Zealand Standard**Electromagnetic compatibility (EMC)****Part 4.27: Testing and measurement techniques—Unbalance, immunity test**

1 Scope and object

This part of IEC 61000 is a basic EMC (electromagnetic compatibility) publication. It considers immunity tests for electric and/or electronic equipment (apparatus and system) in its electromagnetic environment. Only conducted phenomena are considered, including immunity tests for equipment connected to public and industrial networks.

The object of this standard is to establish a reference for evaluating the immunity of electrical and electronic equipment when subjected to unbalanced power supply voltage.

This standard applies to 50 Hz/60 Hz three-phase powered electrical and/or electronic equipment with rated line current up to 16 A per phase.

This standard does not apply to equipment with three-phase plus neutral connection if that equipment operates as a group of single-phase loads connected between phase and neutral.

This standard does not apply to electrical and/or electronic equipment connected to a.c. 400 Hz distribution networks.

This standard does not include tests for the zero-sequence unbalance factor.

The immunity test levels required for a specific electromagnetic environment together with performance criteria are indicated in the product, product family or generic standards as applicable. This immunity test should be included in product, product family or generic standards when equipment is likely to show reduced performance or function when exposed to a supply voltage with voltage unbalance.

The verification of the reliability of electrical components (capacitors, motors, etc.) and long-term effects (greater than a few minutes) is not considered in this standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61000 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(161), *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC 61000-2-4, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances*